

AMENDMENTS TO THE CLAIMS

1. (currently amended) A process for preparing a support for catalysts, which comprises:
 - a) preparing a hydrogel;
 - b) milling the hydrogel to give a finely particulate hydrogel having a solids content;
 - c) producing a slurry ~~based on~~having a solids content, the slurry comprising the finely particulate hydrogel;
 - d) drying the slurry comprising the finely particulate hydrogel ~~to give the, thereby forming a support for catalysts,~~

wherein ~~at~~the finely particulate hydrogel ~~in~~which comprises:

 - at least 5% by volume of the particles, based on the total volume of the particles, have a particle size in the range from > 0 µm to ≤ 3 µm; and/or
 - at least 40% by volume of the particles, based on the total volume of the particles, have a particle size in the range from > 0 µm to ≤ 12 µm, and/or
 - at least 75% by volume of the particles, based on the total volume of the particles, have a particle size in the range from > 0 µm to ≤ 35 µm;

~~— is produced in step b).~~
2. (currently amended) ~~A~~The process for preparing ~~at~~the support for catalysts as claimed in claim 1, wherein ~~at~~the finely particulate hydrogel ~~in~~which comprising at least 90% by volume of the hydrogel particles, based on the total volume of the particles, ~~have~~has a particle size in the range from > 0 µm to ≤ 35 µm ~~is produced in step b).~~
3. (currently amended) ~~A~~The process for preparing ~~at~~the support for catalysts as claimed in claim 1 ~~or 2~~, wherein the finely particulate hydrogel ~~produced in step b)~~ has a solids content in the range from > 0% by weight to ≤ 25% by weight, ~~preferably in the range from 8% by weight to 13% by weight, more preferably in the range from 9% by weight to 12% by weight~~, calculated as oxide.

4. (currently amended) AThe process for preparing the support for catalysts as claimed in any of the preceding claimsclaim 1, wherein the finely particulate hydrogel in whichcomprising at least 40% by volume, preferably at least 50% by volume, of the hydrogel particles, based on the total volume of the particles, havehas a particle size in the range from > 0 μm to \leq 10 μm is produced in step b).
5. (currently amended) AThe process for preparing the support for catalysts as claimed in any of the preceding claimsclaim 1, wherein the finely particulate hydrogel in whichcomprising at least 10% by volume of the hydrogel particles, based on the total volume of the particles, havehas a particle size in the range from > 0 μm to \leq 2.8 μm ; preferably in the range from > 0 μm to \leq 2.5 μm , is produced in step b.
6. (currently amended) AThe process for preparing the support for catalysts as claimed in any of the preceding claimsclaim 1, wherein inorganic hydroxides, oxide-hydroxides, oxides and/or salts, preferably selected from the group consisting of SiO₂, Al₂O₃, MgO, AlPO₄, TiO₂, ZrO₂, Cr₂O₃ andor mixtures thereof, are added to the hydrogel in step b) and/or the slurry in step c).
7. (currently amended) AThe process for preparing the support for catalysts as claimed in any of the preceding claimsclaim 1, wherein inorganic hydroxides, oxide-hydroxides, oxides and/or salts are added to the hydrogel in step b) and/or the slurry in step c) in an amount of \leq 10% by weight, preferably \leq 5% by weight, particularly preferably \leq 2% by weight, based on the total solids content.
8. (currently amended) AThe process for preparing the support for catalysts as claimed in any of the preceding claimsclaim 1, wherein AlOOH is added to the hydrogel in step b) and/or the slurry in step c) in an amount of from 1% by weight to 30% by weight, preferably from 5% by weight to 20% by weight, based on the total solids content.

9. (currently amended) ~~A~~The process for preparing a support for catalysts as claimed in ~~any of the preceding claims~~claim 1, wherein compounds of alkaline earth metals, ~~preferably selected from the group consisting of Ca(OH)₂ and Mg(OH)₂~~, are added to the hydrogel in step b) and/or the slurry in step c) in an amount of from 1% by weight to 10% by weight, ~~particularly preferably from 2% by weight to 4% by weight~~, based on the total solids content.
10. (currently amended) ~~A~~The process for preparing ~~the~~ support for catalysts as claimed in ~~any of the preceding claims~~claim 1, wherein hydroxyl methyl cellulose is added to the hydrogel in step b) and/or the slurry in step c) in an amount of from 0.1% by weight to 10% by weight, ~~particularly preferably from 1% by weight to 2% by weight~~, based on the total solids content.
11. (currently amended) ~~A~~The process for preparing ~~the~~ support for catalysts as claimed in ~~any of the preceding claims~~claim 1, wherein the solids content of the slurry in step (c) is set to $\leq 20\%$ by weight, ~~preferably $\leq 15\%$ by weight, particularly preferably $\leq 10\%$ by weight, very particularly preferably in the range from 8% by weight to 10% by weight~~, based on the total weight, in step c).
12. (currently amended) ~~A~~The process for preparing ~~the~~ support for catalysts as claimed in ~~any of the preceding claims~~claim 1, wherein drying of the slurry comprising the finely particulate hydrogel is carried out by means of spray drying.
13. (currently amended) ~~A~~The process for preparing ~~the~~ support for catalysts as claimed in ~~any of the preceding claims~~claim 1, wherein $\leq 5\%$ by volume, ~~preferably $\leq 2\%$ by volume~~, of the support particles obtained after drying have a particle size in the range from $> 0 \mu\text{m}$ to $\leq 25 \mu\text{m}$, based on the total volume of the particles.
14. (currently amended) ~~A~~The process for preparing ~~the~~ support for catalysts as claimed in ~~any of the preceding claims~~claim 1, wherein the support particles produced after drying

have a mean particle size in the range from 1 μm to 350 μm , ~~preferably in the range from 30 μm to 150 μm and particularly preferably in the range from 40 μm to 100 μm~~ .

15. (currently amended) A support for catalysts ~~which can be prepared as claimed in any of the preceding claims~~

by a process comprising:

- a) preparing a hydrogel;
- b) milling the hydrogel to give a finely particulate hydrogel;
- c) producing a slurry comprising the finely particulate hydrogel;
- d) drying the slurry comprising the finely particulate hydrogel, thereby forming a support for catalysts,

wherein the finely particulate hydrogel comprises:

- at least 5% by volume of the particles, based on the total volume of the particles, have a particle size in the range from > 0 μm to $\leq 3 \mu\text{m}$; and/or
- at least 40% by volume of the particles, based on the total volume of the particles, have a particle size in the range from > 0 μm to $\leq 12 \mu\text{m}$, and/or
- at least 75% by volume of the particles, based on the total volume of the particles, have a particle size in the range from > 0 μm to $\leq 35 \mu\text{m}$.

16. (currently amended) ~~A~~The support for catalysts as claimed in claim 15, ~~wherein the further comprising a silicon content of the support is of $\geq 10\%$ by weight, preferably $\geq 25\%$ by weight, particularly preferably $\geq 30\%$ by weight, very particularly preferably $\geq 50\%$ by weight, based on the total weight of the support.~~

17. (currently amended) ~~A~~The support for catalysts as claimed in claim 15 or 16, ~~wherein the further comprising an aluminum content of the support is of $\geq 10\%$ by weight, preferably $\geq 25\%$ by weight, particularly preferably $\geq 30\%$ by weight and very particularly preferably $\geq 50\%$ by weight, based on the total weight of the support.~~

18. (currently amended) ~~The use of a support for catalysts as claimed in any of claims 15 to 17 as catalyst~~A process comprising preparing a catalyst comprising a support, the support being prepared by a process comprising:

- a) preparing a hydrogel;
- b) milling the hydrogel to give a finely particulate hydrogel;
- c) producing a slurry comprising the finely particulate hydrogel;
- d) drying the slurry comprising the finely particulate hydrogel, thereby forming a support for catalysts,

wherein the finely particulate hydrogel comprises:

- at least 5% by volume of the particles, based on the total volume of the particles, have a particle size in the range from > 0 µm to ≤ 3 µm; and/or
- at least 40% by volume of the particles, based on the total volume of the particles, have a particle size in the range from > 0 µm to ≤ 12 µm, and/or
- at least 75% by volume of the particles, based on the total volume of the particles, have a particle size in the range from > 0 µm to ≤ 35 µm.

19. (currently amended) ~~The use of a support for catalysts as claimed in any of claims 15 to 17 for preparing supported catalysts for the polymerization and/or copolymerization of olefins~~The process of claim 18 wherein the catalyst is a polymerization or copolymerization catalyst for olefins.

20. (new) The process of claim 3 wherein the solids content of the finely particulate hydrogel is in the range of 8% by weight to 13% by weight.

21. (new) The process of claim 20 wherein the solids content of the finely particulate hydrogel is in the range of 9% by weight to 12% by weight.

22. (new) The process of claim 4 wherein the finely particulate hydrogel comprises at least 50% by volume of the hydrogel particles.

23. (new) The process of claim 5 wherein the particle size range of the finely particulate hydrogel is from > 0 µm to ≤ 2.5 µm.

24. (new) The process of claim 6 wherein the inorganic hydroxides, oxide-hydroxides, oxides and/or salts are selected from the group consisting of SiO₂, Al₂O₃, MgO, AlPO₄, TiO₂, ZrO₂, Cr₂O₃ and mixtures thereof.
25. (new) The process of claim 7 wherein the inorganic hydroxides, oxide-hydroxides, oxides and/or salts are added in an amount of $\leq 5\%$ by weight.
26. (new) The process of claim 25 wherein the inorganic hydroxides, oxide-hydroxides, oxides and/or salts are added in an amount of $\leq 2\%$ by weight.
27. (new) The process of claim 8 wherein the AlOOH is added in an amount from 5% by weight to 20% by weight.
28. (new) The process of claim 9 wherein the compounds of alkaline earth metals are selected from the group consisting of Ca(OH)₂ and Mg(OH)₂.
29. (new) The process of claim 9 wherein the compounds of alkaline earth metals are added in an amount from 2% by weight to 4% by weight.
30. (new) The process of claim 10 wherein the hydroxyl methyl cellulose is added in an amount from 1% by weight to 2% by weight.
31. (new) The process of claim 11 wherein the solids content of the slurry in step (c) is $\leq 15\%$ by weight.
32. (new) The process of claim 31 wherein the solids content of the slurry in step (c) is $\leq 10\%$ by weight.
33. (new) The process of claim 32 wherein the solids content of the slurry in step (c) is from 8% by weight to 10% by weight.

34. (new) The process of claim 13 wherein $\leq 2\%$ by volume of the support particles obtained after drying have a particle size in the range from $> 0 \text{ } \mu\text{m}$ to $\leq 25 \text{ } \mu\text{m}$, based on the total volume of the particles.
35. (new) The process according to claim 14 wherein the support particles have a mean particle size in the range from $30 \text{ } \mu\text{m}$ to $150 \text{ } \mu\text{m}$.
36. (new) The process according to claim 35 wherein the support particles have a mean particle size in the range from $40 \text{ } \mu\text{m}$ to $100 \text{ } \mu\text{m}$.
37. (new) The process according to claim 16 wherein the silicon content is $\geq 25\%$ by weight.
38. (new) The process according to claim 37 wherein the silicon content is $\geq 30\%$ by weight.
39. (new) The process according to claim 38 wherein the silicon content is $\geq 50\%$ by weight.
40. (new) The process according to claim 17 wherein the aluminum content is $\geq 25\%$ by weight.
41. (new) The process according to claim 40 wherein the aluminum content is $\geq 30\%$ by weight.
42. (new) The process according to claim 41 wherein the aluminum content is $> 50\%$ by weight.